



Web Service Integration White Paper

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Table of Contents

Introduction	3
Architecture	5
ADSI Shipping Server	5
Carrier Components	6
Microsoft SQL Server	7
ADSI Web Service Interface	7
Integration	8
Sample Transactions	9
Rate Package	9
Ship Package	15
Installation	25
Installation Architectures.....	25
Level 0 Installation	25
Level 1 Installation	26
Level 2 Installation	26
Level 3 Installation	27
Performance	28
System Prerequisites.....	28
HTTP Connectivity to ConnectShip	29
ADSI Client Server Communication.....	29
Additional Requirements	30
Carrier Prerequisites	30
FedEx	30
DHL Express.....	30
UPS	32
Endicia	32

Introduction

Since the early 1900's, when UPS got their start delivering packages on bikes and Ford Model-T's, a lot has changed in the world of transportation. The idea of someone sending a package and someone receiving a package still remains as simple as ever, but everything in between has grown increasingly more complex in order to deliver packages cheaper, faster, and more accurately. In addition, where we once only had a couple choices in whom to entrust our deliveries to, we now have hundreds, or even thousands, all specializing in different types of services. In the last quarter century, the need for multi-carrier shipping solutions has grown considerably. But how do you choose the right one?

If you're like most companies, shipping is an integral part of your business. It's even more so for resellers and manufacturers, whose lifeline depends on shipping products out and maintaining a steady revenue stream from it. With something so profitable and so valuable, you wouldn't trust the design of this system to just anyone. Regardless of how polished a system may look and feel, if the company has a poor reputation in support or is not known to deliver efficiently, you may be looking at a losing investment that could not only decrease production levels but also increase cost. You need a provider who is experienced and is proven to deliver quality and long lasting solutions.

Since 1997, ADSI has successfully installed over 1,500 systems in the United States, Canada, and around the world. An even bigger testament is that most of these customers are still our customers today! Several of these have been with ADSI since the beginning and even through corporate mergers and acquisitions, our shipping solutions not only remain, but are also installed at all the subsidiaries. ADSI's customer base includes all shapes and sizes, from small storefronts to large worldwide corporations. Our solutions integrate with enterprise systems like: Oracle, SAP, AS/400 to small localized systems like: MOMS, SAGE X3, and QuickBooks, and everything in between.

Not only is our experience and reputation known by our customers, they are also known by our partners. As a solutions provider, we work with our long list of partners to deliver the right solution for our customers. Among our partnerships, here are a few:

- FedEx Top National Solution Provider
- UPS Ready Certified Partner
- ConnectShip Platinum Partner
- U.S. Postal Service Top National Partner
- Motorola Elite Level Channel Partner
- Zebra Premier Partner

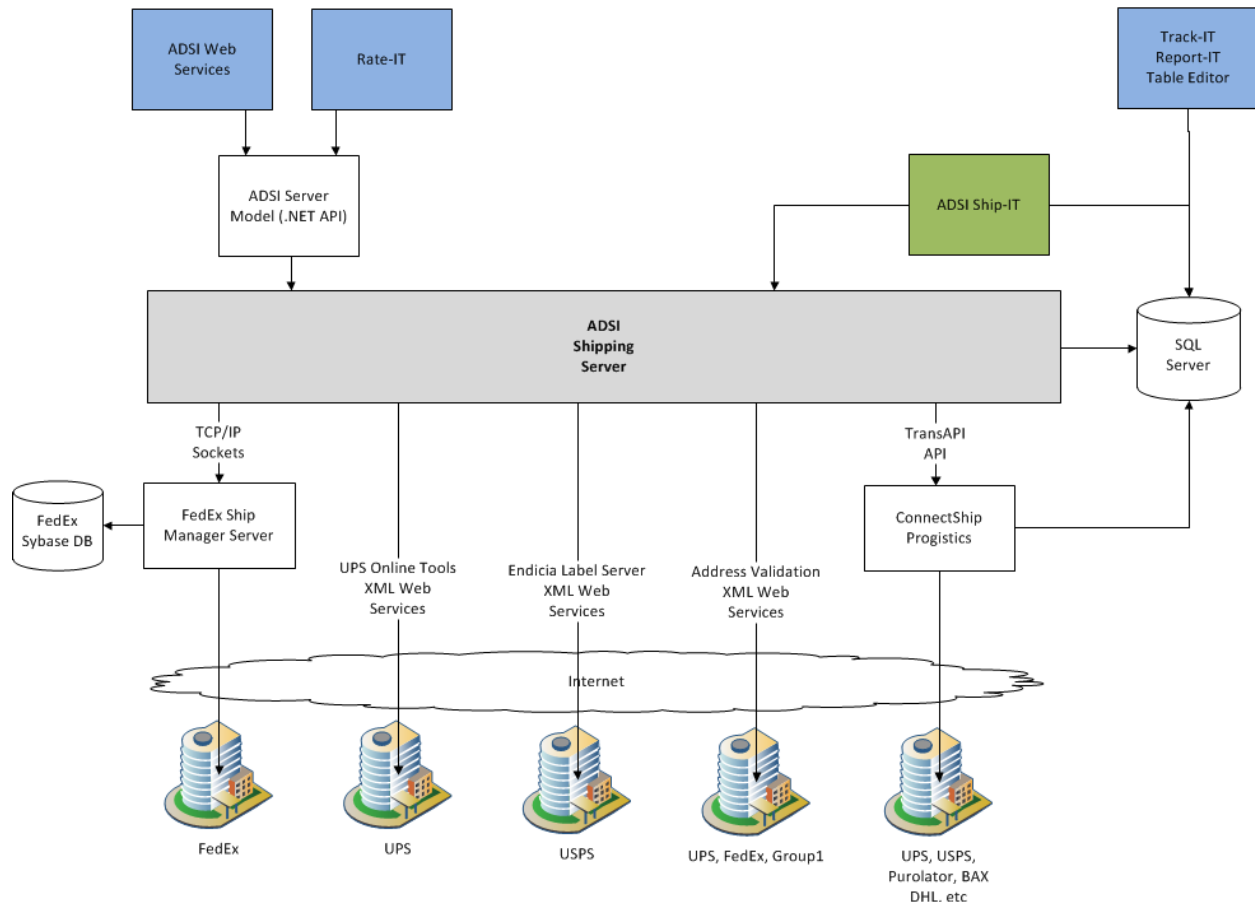
ADSI is also the world's largest ConnectShip integrator. With partnerships like these, ADSI gains access to all the newest offerings, and top tier support that may not be available to lesser partners. The

benefits from these partnerships are then turned around and shared with our customers. Backed by these partnerships and our longstanding history of successful installations, ADSI is guaranteed to deliver top quality solutions and top quality support.

This system architecture white paper will outline the components of an ADSI Black Box implementation using the ADSI Web Service Interface.

Architecture

Below is a high level diagram of the ADSI Shipping Solution:

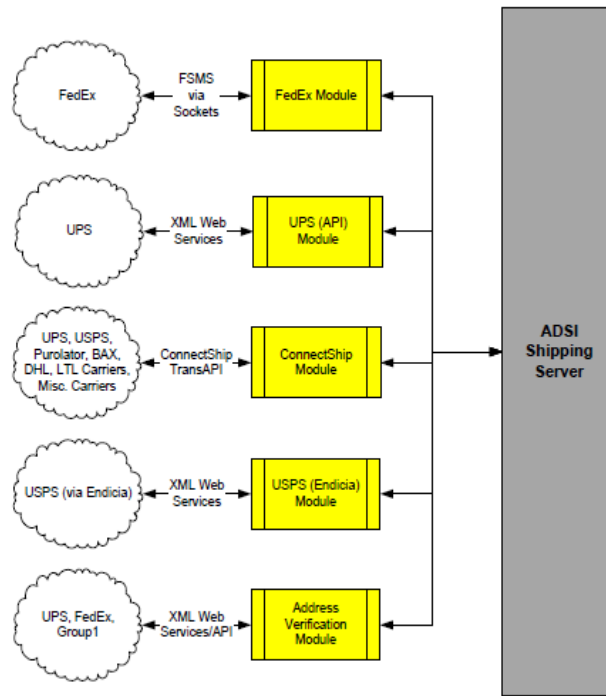


The components of an ADSI Web Service Implementation are as follows:

- ADSI Shipping Server
- Carrier Components (as needed)
 - o ConnectShip Prologistics
 - o FedEx Ship Manager Server
- Microsoft SQL Server Database
- ADSI Web Service Interface

ADSI Shipping Server

The heart of the entire solution is the ADSI Server Service. This is a Microsoft .NET Windows Service application working as an Asynchronous Socket Server. The service will create worker threads, and assign process requests to them as needed for quick and efficient response times. The ADSI Server Service is composed of several modules, making it versatile and able to omit processes that are not needed.



Upon receiving a request, the ADSI Shipping Server will determine which module is responsible for the action, and will send it to the appropriate module for processing.

For instance, if an Endicia shipment request were received, the ADSI Shipping Server would have the USPS Endicia Module process the request. The Endicia module would use the data that it received to formulate the XML SOAP message required and send it to Endicia for processing. Once receiving the XML response back from Endicia, over the Internet, the Endicia Module would then translate the XML data into objects, which the ADSI Shipping Server will return in the proper format.

Carrier Components

Depending on the list of carriers used in the ADSI Shipping System, some additional software may be required. Because the ADSI Shipping Server is modular, these applications do not need to be installed unless necessary.

These carriers do not need additional software, outside of the ADSI Shipping Server:

- Endicia (USPS)
- UPS API
- Stamps.com (USPS)
- Banyan

- Echo Global Logistics

The following carriers require ConnectShip Prologistics to be installed:

- BAX Global
- Canada Post
- Canpar
- DHL Express
- Purolator Courier
- Purolator Freight
- Purolator Legacy
- TNT Express
- UPS
- UPS Freight
- UPS Mail Innovations
- UPS Air Freight (UPS SCS)
- USPS Mail Manifesting

Finally, FedEx shipping requires FedEx Ship Manager Server to be installed.

Microsoft SQL Server

The entire ADSI Shipping System is database driven from a SQL Server database. All configurations, shipper mappings, and shipment history are contained within tables in the database. The ConnectShip Prologistics application is also SQL Server based. In addition to the account and application configurations, it also stores rate, route, zone, time in transit, etc. information.

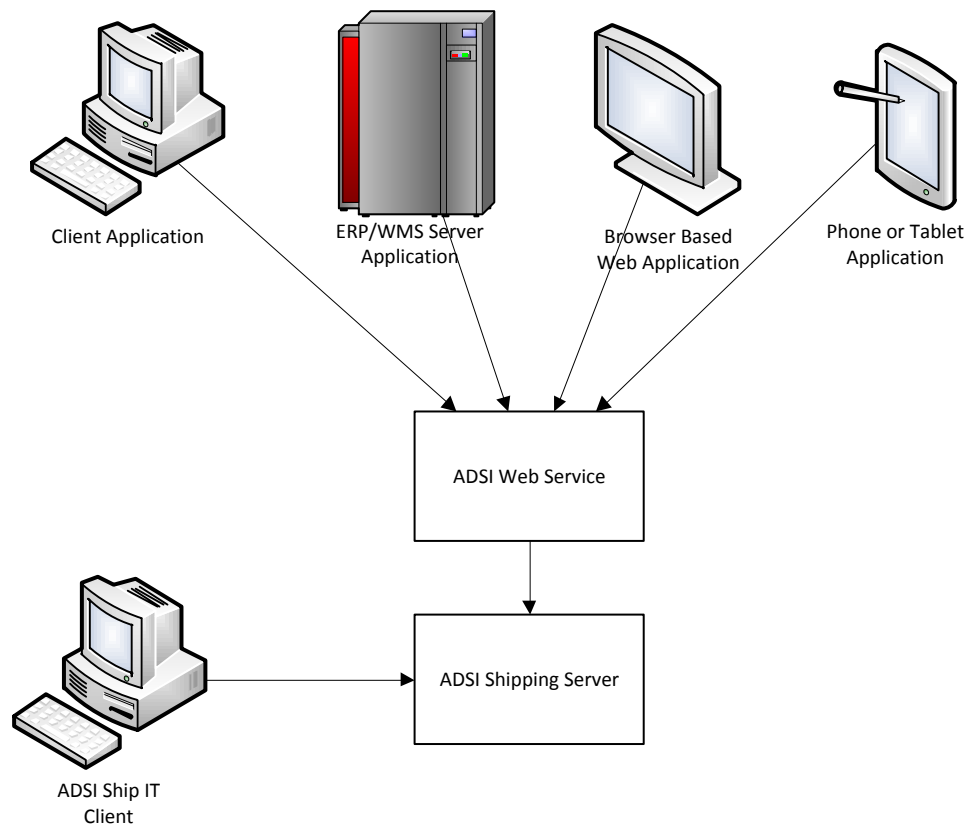
ADSI Web Service Interface

Finally, with the ADSI Shipping System and required Carrier Components in place, the ADSI Web Service Interface provides interaction to all that the ADSI Shipping System has to offer. The ADSI Web Service Interface is a Microsoft .NET Web Service that will run under Microsoft Internet Information Services (IIS) on the server.

Integration

The scope of this document is to provide technical information about the ADSI Web Services integration to the ADSI Shipping Server; however, ADSI also has the ADSI Ship IT shipping client for Windows workstations. While it communicates with the ADSI Server over TCP/IP sockets, it can be used in conjunction with the ADSI Web Services integration, in case there are functions that are not available through your system.

Interaction with the ADSI Shipping Server via ADSI Web Services is all SOAP XML based. No matter what type of application you are writing or what platform, you have access to all the ADSI Shipping Server functions via SOAP XML Messages.



Sample Transactions

Below are sample transactions for some of the more commonly used functions available in the ADSI Web Service Interface.

Rate Package

Sample Request for a UPS Ground Rate:

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
xmlns:ads="http://adsionline.com/ADSIShippingWS/"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <soap:Header/>
  <soap:Body>
    <ads:Rate>
      <ads:shipment>
        <ads:Recipient>
          <ads:Contact>Julius Peppers</ads:Contact>
          <ads:Company>Chicago Bears</ads:Company>
          <ads:Address1>1410 Museum Campus Drive</ads:Address1>
          <ads:City>Chicago</ads:City>
          <ads:State>IL</ads:State>
          <ads:PostalCode>60607</ads:PostalCode>
          <ads:Phone>312-235-7000</ads:Phone>
          <ads:Country>
            <ads:FriendlyName>United States</ads:FriendlyName>
          </ads:Country>
        </ads:Recipient>
        <ads:Service>
          <ads:FriendlyName>UPS Ground</ads:FriendlyName>
        </ads:Service>
        <ads:ShipperName>ADSI US</ads:ShipperName>
        <ads:ShipDate>2012-02-24</ads:ShipDate>
        <ads:Packages>
          <ads:Package>
            <ads:Weight>2.1</ads:Weight>
            <ads:Dimension>10x10x10</ads:Dimension>
          </ads:Package>
        </ads:Packages>
      </ads:shipment>
    </ads:Rate>
  </soap:Body>
</soap:Envelope>
```

Response:

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <RateResponse xmlns="http://adsionline.com/ADSIShippingWS/">
      <RateResult>
        <Success>true</Success>
        <ShipmentResultList>
```

```

<ShipmentResult>
  <BundleID>0</BundleID>
  <AMSN>A5512</AMSN>
  <Discount>0</Discount>
  <Base>5.45</Base>
  <Total>5.89</Total>
  <Special>0.44</Special>
  <Zone>2</Zone>
  <TimeInTransit>tntFOREVER</TimeInTransit>
  <ShipmentID>2759b6e7-c7c3-40ec-8abe-
9fb3f8ad0c9e</ShipmentID>
  <CustomFields>
    <item>
      <key>
        <string xmlns="">FUEL_SURCHARGE</string>
      </key>
      <value>
        <string xmlns="">0.44</string>
      </value>
    </item>
    <item>
      <key>
        <string xmlns="">BUNDLE_ID_LIST</string>
      </key>
      <value>
        <string xmlns=""/>
      </value>
    </item>
  </CustomFields>
  <ServiceSymbol>TANDATA_UPS.UPS.GND</ServiceSymbol>
  <ServicePlaintext>UPS Ground</ServicePlaintext>
  <PackageResults>
    <PackageResult>
      <MSN>0</MSN>
      <Discount>0.44</Discount>
      <Total>5.89</Total>
      <Base>5.45</Base>
      <Special>0</Special>
      <TrackingNumber/>
      <PackageID>7cb94394-5fdf-4ca3-9a21-
9694cea52a26</PackageID>
      <CustomFields>
        <item>
          <key>
            <string xmlns="">ROUTING_CODE</string>
          </key>
          <value>
            <string xmlns="">IL 606 9-02</string>
          </value>
        </item>
        <item>
          <key>
            <string
xmlns="">DIMENSIONAL_WEIGHT_RATED</string>

```

```

    </key>
    <value>
      <string xmlns="">False</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">RATED_WEIGHT</string>
    </key>
    <value>
      <string xmlns="">2.1</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">FUEL_SURCHARGE</string>
    </key>
    <value>
      <string xmlns="">0.44</string>
    </value>
  </item>
  <item>
    <key>
      <string
xmlns="">HUNDREDWEIGHT_RATED</string>
    </key>
    <value>
      <string xmlns="">False</string>
    </value>
  </item>
  <item>
    <key>
      <string
xmlns="">NOFN_SEQUENCE_BUNDLE</string>
    </key>
    <value>
      <string xmlns="">1</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">NOFN_TOTAL_BUNDLE</string>
    </key>
    <value>
      <string xmlns="">1</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">PACKAGE_LIST_ID</string>
    </key>
    <value>
      <string xmlns="">-27</string>
    </value>
  </item>

```

```

        </item>
      </CustomFields>
    </PackageResult>
  </PackageResults>
</ShipmentResult>
</ShipmentResultList>
</RateResult>
</RateResponse>
</soap:Body>
</soap:Envelope>

```

The ADSI Shipping System also provides Rate Shopping features. After populating the Rate Shopping Group with a list of services to rate shop, simply call the same XML Request for a rate, but using the Rate Shopping Group name as the ServicePlaintext value. Below is a sample response of a Rate Shopping Group:

```

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <RateResponse xmlns="http://adsionline.com/ADSIShippingWS/">
      <RateResult>
        <Success>true</Success>
        <ShipmentResultList>
          <ShipmentResult>
            <BundleID>0</BundleID>
            <AMSN>A5514</AMSN>
            <Discount>0</Discount>
            <Base>5.45</Base>
            <Total>5.89</Total>
            <Special>0.44</Special>
            <Zone>2</Zone>
            <TimeInTransit>tntFOREVER</TimeInTransit>
            <ShipmentID>b8439fc3-2f08-4946-bf68-
193ea3c4c40e</ShipmentID>
            <CustomFields>
              <item>
                <key>
                  <string xmlns="">FUEL_SURCHARGE</string>
                </key>
                <value>
                  <string xmlns="">0.44</string>
                </value>
              </item>
              <item>
                <key>
                  <string xmlns="">BUNDLE_ID_LIST</string>
                </key>
                <value>
                  <string xmlns=""></string>
                </value>
              </item>
            </CustomFields>
          </ShipmentResult>
        </ShipmentResultList>
      </RateResult>
    </RateResponse>
  </soap:Body>
</soap:Envelope>

```

```

<ServiceSymbol>TANDATA_UPS.UPS.GND</ServiceSymbol>
<ServicePlaintext>UPS Ground</ServicePlaintext>
<PackageResults>
  <PackageResult>
    <MSN>0</MSN>
    <Discount>0.44</Discount>
    <Total>5.89</Total>
    <Base>5.45</Base>
    <Special>0</Special>
    <TrackingNumber/>
    <PackageID>1786d538-c260-4d9d-a246-
07b89ad95b03</PackageID>
    <CustomFields>
      <item>
        <key>
          <string xmlns="">ROUTING_CODE</string>
        </key>
        <value>
          <string xmlns="">IL 606 9-02</string>
        </value>
      </item>
      <item>
        <key>
          <string
xmlns="">DIMENSIONAL_WEIGHT_RATED</string>
        </key>
        <value>
          <string xmlns="">False</string>
        </value>
      </item>
      <item>
        <key>
          <string xmlns="">RATED_WEIGHT</string>
        </key>
        <value>
          <string xmlns="">2.1</string>
        </value>
      </item>
      <item>
        <key>
          <string xmlns="">FUEL_SURCHARGE</string>
        </key>
        <value>
          <string xmlns="">0.44</string>
        </value>
      </item>
      <item>
        <key>
          <string
xmlns="">HUNDREDWEIGHT_RATED</string>
        </key>
        <value>
          <string xmlns="">False</string>
        </value>
      </item>
    </CustomFields>
  </PackageResult>
</PackageResults>

```

```

    </item>
    <item>
      <key>
        <string
xmlns="">NOFN_SEQUENCE_BUNDLE</string>
        </key>
        <value>
          <string xmlns="">1</string>
        </value>
      </item>
      <item>
        <key>
          <string xmlns="">NOFN_TOTAL_BUNDLE</string>
        </key>
        <value>
          <string xmlns="">1</string>
        </value>
      </item>
      <item>
        <key>
          <string xmlns="">PACKAGE_LIST_ID</string>
        </key>
        <value>
          <string xmlns="">-39</string>
        </value>
      </item>
    </CustomFields>
  </PackageResult>
</PackageResults>
</ShipmentResult>
<ShipmentResult>
  <BundleID>0</BundleID>
  <Discount>0</Discount>
  <Base>0</Base>
  <Total>10.49</Total>
  <Special>0</Special>
  <TimeInTransit>tntTHREEDAY</TimeInTransit>
  <ShipmentID>15b32d67-21de-40b6-bc92-
c75f5c56b44e</ShipmentID>
  <CustomFields/>
  <ServicePlaintext>UPS 3 Day Select (US)</ServicePlaintext>
  <PackageResults/>
</ShipmentResult>
<ShipmentResult>
  <BundleID>0</BundleID>
  <Discount>0</Discount>
  <Base>0</Base>
  <Total>14.42</Total>
  <Special>0</Special>
  <TimeInTransit>tntTWODAY</TimeInTransit>
  <ShipmentID>64cfad7a-543f-4201-96c4-
79c02ef772cc</ShipmentID>
  <CustomFields/>
  <ServicePlaintext>UPS 2nd Day Air</ServicePlaintext>

```

```

        <PackageResults/>
    </ShipmentResult>
    <ShipmentResult>
        <BundleID>0</BundleID>
        <Discount>0</Discount>
        <Base>0</Base>
        <Total>16.76</Total>
        <Special>0</Special>
        <TimeInTransit>tntTWO DAY_10_30_AM</TimeInTransit>
        <ShipmentID>d38e986a-6848-422c-993c-
ec2fbaf8775e</ShipmentID>
        <CustomFields/>
        <ServicePlaintext>UPS 2nd Day Air A.M.</ServicePlaintext>
        <PackageResults/>
    </ShipmentResult>
    <ShipmentResult>
        <BundleID>0</BundleID>
        <Discount>0</Discount>
        <Base>0</Base>
        <Total>26.68</Total>
        <Special>0</Special>
        <TimeInTransit>tntNEXTDAY_3_00_PM</TimeInTransit>
        <ShipmentID>f0ec810f-99d2-44e3-a657-
5a396e76630f</ShipmentID>
        <CustomFields/>
        <ServicePlaintext>UPS Next Day Air Saver</ServicePlaintext>
        <PackageResults/>
    </ShipmentResult>
    <ShipmentResult>
        <BundleID>0</BundleID>
        <Discount>0</Discount>
        <Base>0</Base>
        <Total>33.17</Total>
        <Special>0</Special>
        <TimeInTransit>tntNEXTDAY_10_30_AM</TimeInTransit>
        <ShipmentID>6414f19b-eab9-449b-97ea-
05fe8b1fec72</ShipmentID>
        <CustomFields/>
        <ServicePlaintext>UPS Next Day Air</ServicePlaintext>
        <PackageResults/>
    </ShipmentResult>
</ShipmentResultList>
</RateResult>
</RateResponse>
</soap:Body>
</soap:Envelope>

```

Ship Package

Sample Ship Request:

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
xmlns:ads="http://adsionline.com/ADSIShippingWS/"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <soap:Header/>
  <soap:Body>
    <ads:Ship>
      <ads:shipment>
        <ads:ID>ABC</ads:ID>
        <ads:Recipient>
          <ads:ID>ABC</ads:ID>
          <ads:Contact>Julius Peppers</ads:Contact>
          <ads:Company>Chicago Bears</ads:Company>
          <ads:Address1>1410 Museum Capmpus Dr</ads:Address1>
          <ads:Address2>Locker #90</ads:Address2>
          <ads:City>Chicago</ads:City>
          <ads:State>IL</ads:State>
          <ads:PostalCode>60607</ads:PostalCode>
          <ads:Country>
            <ads:FriendlyName>United States</ads:FriendlyName>
          </ads:Country>
          <ads:Phone>8478841940</ads:Phone>
        </ads:Recipient>
        <ads:Service>
          <ads:FriendlyName>FedEx 2Day</ads:FriendlyName>
        </ads:Service>
        <ads:ServiceName>FedEx 2Day</ads:ServiceName>
        <ads:Terms>trmSHIPPER</ads:Terms>
        <ads:ShipDate>2012-03-04</ads:ShipDate>
        <ads:ManifestAction>maRELEASE</ads:ManifestAction>
        <ads:ShipperName>ADSI US</ads:ShipperName>
        <ads:ShipperReference>SR1234</ads:ShipperReference>
        <ads:CustomFields>
          <item>
            <key>
              <string>FSMS_PRINT_LABELTYPE</string>
            </key>
            <value>
              <string>
xmlns="">ADSI_FEDEX_EXPDOM_THERMAL_LABEL</string>
            </value>
          </item>
          <item>
            <key>
              <string>FSMS_PRINT_STOCKSYMBOL</string>
            </key>
            <value>
              <string xmlns="">ADSI_FEDEX_4X6_NON_DOCTAB</string>
            </value>
          </item>
          <item>
            <key>
              <string>FSMS_PRINT_PRINTERSYMBOL</string>
            </key>
            <value>
```



```

        <string xmlns="">ADSI_FEDEX_ZEBRA_105</string>
    </value>
</item>
<item>
    <key>
        <string>FSMS_PRINT_COPIES</string>
    </key>
    <value>
        <string xmlns="">1</string>
    </value>
</item>
<item>
    <key>
        <string>FSMS_PRINT_DESTINATION</string>
    </key>
    <value>
        <string xmlns="">CLIENT</string>
    </value>
</item>
<item>
    <key>
        <string>FSMS_PRINT_SERVERPRINT</string>
    </key>
    <value>
        <string xmlns="">False</string>
    </value>
</item>
<item>
    <key>
        <string>FSMS_FAKE_MULTIPIECE</string>
    </key>
    <value>
        <string xmlns="">False</string>
    </value>
</item>
<item>
    <key>
        <string>NOFN_SEQUENCE</string>
    </key>
    <value>
        <string xmlns="">1</string>
    </value>
</item>
<item>
    <key>
        <string>NOFN_TOTAL</string>
    </key>
    <value>
        <string xmlns="">1</string>
    </value>
</item>
</ads:CustomFields>

<ads:Packages>

```

```

    <!--Zero or more repetitions:-->
    <ads:Package>
      <ads:ID>123</ads:ID>
      <ads:Weight>1</ads:Weight>
      <ads:Dimension>7x7x7</ads:Dimension>
      <ads:Description>Widgets</ads:Description>
    </ads:Package>
  </ads:Packages>
</ads:Shipment>
</ads:Ship>
</soap:Body>
</soap:Envelope>

```

Response:

```

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <ShipResponse xmlns="http://adsionline.com/ADSIShippingWS/">
      <ShipResult>
        <Success>true</Success>
        <ShipmentResultResponse>
          <BundleID>0</BundleID>
          <AMSN>A5515</AMSN>
          <Discount>0</Discount>
          <Base>13</Base>
          <Total>14.95</Total>
          <Special>1.95</Special>
          <Zone>4</Zone>
          <TimeInTransit>tntTWO DAY_4_30_PM</TimeInTransit>
          <ShipmentID>a86470c2-4067-49fc-b684-92c6d33df561</ShipmentID>
          <CustomFields>
            <item>
              <key>
                <string xmlns="">OPEN_SHIP_INDEX</string>
              </key>
              <value>
                <string xmlns="">167566523</string>
              </value>
            </item>
            <item>
              <key>
                <string xmlns="">URSA_CODE</string>
              </key>
              <value>
                <string xmlns="">SY GYYA</string>
              </value>
            </item>
            <item>
              <key>
                <string xmlns="">SERVICE_COMMITMENT_CODE</string>
              </key>
            </item>
          </CustomFields>
        </ShipmentResultResponse>
      </ShipResult>
    </ShipResponse>
  </soap:Body>
</soap:Envelope>

```

```

    <value>
      <string xmlns="">A1</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">ASTRA_DELIVERY_DAY</string>
    </key>
    <value>
      <string xmlns="">WED</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">ASTRA_DESTINATION_RAMP</string>
    </key>
    <value>
      <string xmlns="">ORD</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">ASTRA_LOCATION_ID</string>
    </key>
    <value>
      <string xmlns="">GYA</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">ASTRA_DELIVERY_DATE</string>
    </key>
    <value>
      <string xmlns="">07Mar12</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">DIMENSIONAL_WEIGHT_RATED</string>
    </key>
    <value>
      <string xmlns="">True</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">MESSAGE_TYPE_CODE</string>
    </key>
    <value>
      <string xmlns="">06</string>
    </value>
  </item>
  <item>
    <key>

```

```

        <string xmlns="">MESSAGE_CODE</string>
      </key>
      <value>
        <string xmlns="">2074</string>
      </value>
    </item>
    <item>
      <key>
        <string xmlns="">MESSAGE_TEXT</string>
      </key>
      <value>
        <string xmlns="">URSA table is expired</string>
      </value>
    </item>
    <item>
      <key>
        <string xmlns="">RATE_RETURN_CODE</string>
      </key>
      <value>
        <string xmlns="">0</string>
      </value>
    </item>
    <item>
      <key>
        <string xmlns="">URSA_PREFIX</string>
      </key>
      <value>
        <string xmlns="">SY</string>
      </value>
    </item>
    <item>
      <key>
        <string xmlns="">FUEL_SURCHARGE</string>
      </key>
      <value>
        <string xmlns="">1.95</string>
      </value>
    </item>
    <item>
      <key>
        <string xmlns="">LIST_SURCHARGE</string>
      </key>
      <value>
        <string xmlns="">1.95</string>
      </value>
    </item>
    <item>
      <key>
        <string xmlns="">LIST_BASE</string>
      </key>
      <value>
        <string xmlns="">13</string>
      </value>
    </item>

```

```

<item>
  <key>
    <string xmlns="">LIST_FUEL_SURCHARGE</string>
  </key>
  <value>
    <string xmlns="">1.95</string>
  </value>
</item>
<item>
  <key>
    <string xmlns="">EFFECTIVE_NET_DISCOUNT</string>
  </key>
  <value>
    <string xmlns="">0</string>
  </value>
</item>
<item>
  <key>
    <string xmlns="">LIST_TOTAL</string>
  </key>
  <value>
    <string xmlns="">14.95</string>
  </value>
</item>
<item>
  <key>
    <string xmlns="">HANDLING_CHARGE</string>
  </key>
  <value>
    <string xmlns="">0</string>
  </value>
</item>
<item>
  <key>
    <string xmlns="">LIST_HANDLING_CHARGE</string>
  </key>
  <value>
    <string xmlns="">0</string>
  </value>
</item>
<item>
  <key>
    <string
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  </key>
  <value>
    <string xmlns="">14.95</string>
  </value>
</item>
<item>
  <key>
    <string
xmlns="">LIST_TOTAL_CUSTOMER_HANDLING_CHARGE</string>
  </key>

```

```

    <value>
      <string xmlns="">14.95</string>
    </value>
  </item>
  <item>
    <key>
      <string xmlns="">PUBLISHED_DELIVERY_TIME</string>
    </key>
    <value>
      <string xmlns="">4:30 PM</string>
    </value>
  </item>
</CustomFields>
<ServiceSymbol>ADSI.FEDEXPS.2DAY</ServiceSymbol>
<ServicePlaintext>FedEx 2Day</ServicePlaintext>
<PackageResults>
  <PackageResult>
    <MSN>1280</MSN>
    <Discount>0</Discount>
    <Total>0</Total>
    <Base>0</Base>
    <Special>0</Special>
    <TrackingNumber>635501620308</TrackingNumber>
    <PackageID>67412cde-bf48-435b-8410-
133603c5819f</PackageID>
  <CustomFields>
    <item>
      <key>
        <string xmlns="">TRACKING_FORM_ID</string>
      </key>
      <value>
        <string xmlns="">0201</string>
      </value>
    </item>
    <item>
      <key>
        <string xmlns="">BILLED_WEIGHT</string>
      </key>
      <value>
        <string xmlns="">3</string>
      </value>
    </item>
    <item>
      <key>
        <string xmlns="">REVENUE_BARCODE</string>
      </key>
      <value>
        <string xmlns="">90001134010001008</string>
      </value>
    </item>
    <item>
      <key>
        <string xmlns="">ADDRESS_BARCODE</string>
      </key>

```

```

        <value>
          <string xmlns="">71410 MUSEUM CAPMPUS
DR</string>
        </value>
      </item>
      <item>
        <key>
          <string xmlns="">DIMENSIONAL_WEIGHT</string>
        </key>
        <value>
          <string xmlns="">3</string>
        </value>
      </item>
      <item>
        <key>
          <string xmlns="">LABEL_DATA</string>
        </key>
        <value>
          <string
xmlns="">^XA^CF,0,0,0^PR8^PW800^PON^CI13^LH0,20
^FO12,139^GB777,2,2^FS
^FO12,405^GB777,2,2^FS
^FO12,694^GB777,2,2^FS
^FO464,8^GB2,129,2^FS
^FO32,10^AdN,0,0^FVN^FH^FDORIGIN ID: HKAA^FS
^FO224,10^AdN,0,0^FVN^FH^FD(901) 263 4558^FS
^FO32,28^AdN,0,0^FVN^FH^FDROBERT PEARSON^FS
^FO32,46^AdN,0,0^FVN^FH^FDCSP TESTING^FS
^FO32,64^AdN,0,0^FVN^FH^FD10 FEDEX PKWY^FS
^FO32,82^AdN,0,0^FVN^FH^FD^FS
^FO32,100^AdN,0,0^FVN^FH^FDCOLLIERVILLE, TN 38017^FS
^FO32,118^AdN,0,0^FVN^FH^FDUNITED STATES US^FS
^FO478,10^AdN,0,0^FVN^FH^FDSHIP DATE: 04MAR12^FS
^FO478,46^AdN,0,0^FVN^FH^FDCAD: 113401/FXRS1063^FS
^FO478,28^AdN,0,0^FVN^FH^FDDACTWGT: 3 LB^FS
^FO478,64^AdN,0,0^FVN^FH^FDDIMS: 7x7x7 IN^FS
^FO8,151^A0N,21,21^FVN^FH^FDTO^FS
^FO37,149^A0N,38,38^FVN^FH^FDJULIUS PEPPERS^FS
^FO35,359^A0N,21,21^FVN^FH^FD(847) 884 1940^FS
^FO37,191^A0N,38,38^FVN^FH^FDCHICAGO BEARS^FS
^FO37,233^A0N,38,38^FVN^FH^FD1410 MUSEUM CAPMPUS DR^FS
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^FO37,317^A0N,43,40^FVN^FH^FDCHICAGO IL 60607^FS
^FO652,449^A0N,43,58^FVN^FH^FDFedEx^FS
^FO708,488^A0N,19,26^FVN^FH^FDEExpress^FS
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^FO677,521^GB10,112,10^FS
^FO771,521^GB10,112,10^FS
^FO677,633^GB104,10,10^FS
^FO697,529^A0N,128,137^FVN^FH^FDE^FS
^FO21,416^BY2,3^BCN,25,N,N,N^FVN^FD71410 MUSEUM CAPMPUS DR^FS
^FO75,979^BY3,2^BCN,200,N,N,N,N^FVN^FD>;36060767310000006355016203082011^FS
^FO21,449^BY2,2^B7N,10,5,14^FH^FVN^FH^FD[]>_1E01_1D0260607_1D840_1D03_1D63550
16203080201_1DFDE_1D630151821_1D064_1D_1D1/1_1D3LB_1DN_1D1410 Museum Capmpus

```

```
Dr_1DChicago_1DIL_1DJulius Peppers_1E06_1D10ZED005_1D11ZChicago
Bears_1D12Z8478841940_1D14ZLocker
#90_1D15Z113401_1D20Z0.00_1C0.00_1D28Z_1D31Z36060767310000006355016203082011_
1D32Z_1D29Z_1D26Z6cba_1C00_1D_1E_04^FS
^FO478,100^AdN,0,0^FWN^FH^FDBILL SENDER^FS
^FO328,364^AbN,11,7^FWN^FH^FDREF:^FS
^FO38,378^AbN,11,7^FWN^FH^FDINV: SR1234^FS
^FO38,392^AbN,11,7^FWN^FH^FDPO:^FS
^FO428,392^AbN,11,7^FWN^FH^FDDEPT:^FS
^FO390,762^A0N,51,41^FWN^FH^FB400,1,0,R,0^FD** 2DAY **^FS
^FO28,766^A0N,24,24^FWN^FH^FDTRK#^FS
^FO105,769^A0N,53,40^FWN^FH^FD6355 0162 0308^FS
^FO32,793^AdN,0,0^FWN^FH^FD0201^FS
^FO26,787^GB57,1,1^FS
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^FO26,813^GB57,1,1^FS
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^FO485,819^A0N,24,26^FWN^FH^FB300,1,0,R,0^FD^FS
^FO742,708^A0N,51,41^FWN^FH^FDA1^FS
^FO460,708^A0N,51,41^FWN^FH^FDWED - 07MAR^FS
^FO28,875^A0N,107,96^FWN^FH^FDSY GYYA^FS
^FO690,925^A0N,44,44^FWN^FH^FB100,1,0,R,0^FDORD^FS
^FO790,513^A0N,13,18^FWB^FH^FDC10201006012224^FS
^PQ1
^XZ</string>
                                </value>
                            </item>
                        </CustomFields>
                    </PackageResult>
                </PackageResults>
            </ShipmentResultResponse>
        </ShipResult>
    </ShipResponse>
</soap:Body>
</soap:Envelope>
```

The example above showed a sample shipment outputting the label as ZPL. Alternatively, by changing some of the parameters in the XML Request, the label could be generated as an image file.

Installation

Using the ADSI Web Service Interface means you know how you want your data to flow and you have the means and resources to get it done. The ADSI Shipping System is simply a tool to provide you rate information and process the shipments and packages the way you want to. Installation of the ADSI software is a breeze. In less than a day, you can have the ADSI Shipping System installed, complete with the Web Service Interface, and ready to process packages. There are several choices, however, for you to make depending on your resources for scalability and performance.

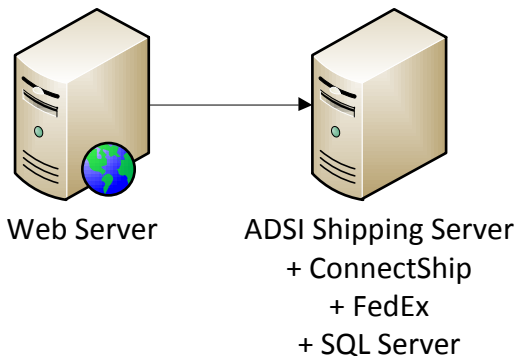
Installation Architectures

Below are the 2 most commonly used installation architectures.

Level 0 Installation

A Level 0 Installation is the cheapest solution; however, will be subject to performance issues with higher levels of usage. In a Level 0, everything is installed on one single server, with only the Web Server being

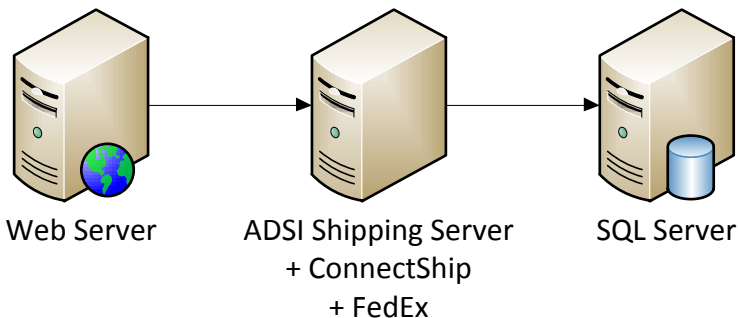
ADSI Level 0 Installation



Level 1 Installation

With a Level 1 Installation, the SQL Server has been split out to provide some additional scalability for performance on the shipping server.

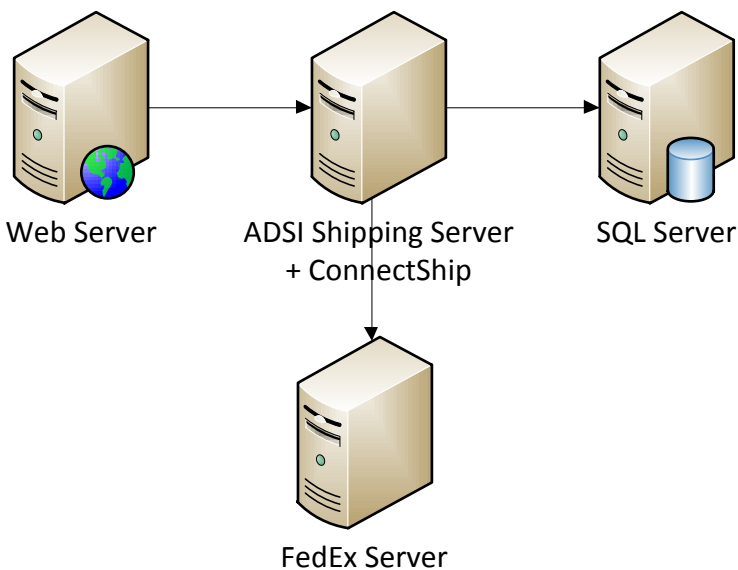
ADSI Level 1 Installation



Level 2 Installation

A Level 2 Installation will break apart the FedEx Ship Manager Server onto a separate system. This is largely due to FedEx FSMS's application requiring a significant amount of resources as the number of accounts and transactions go up.

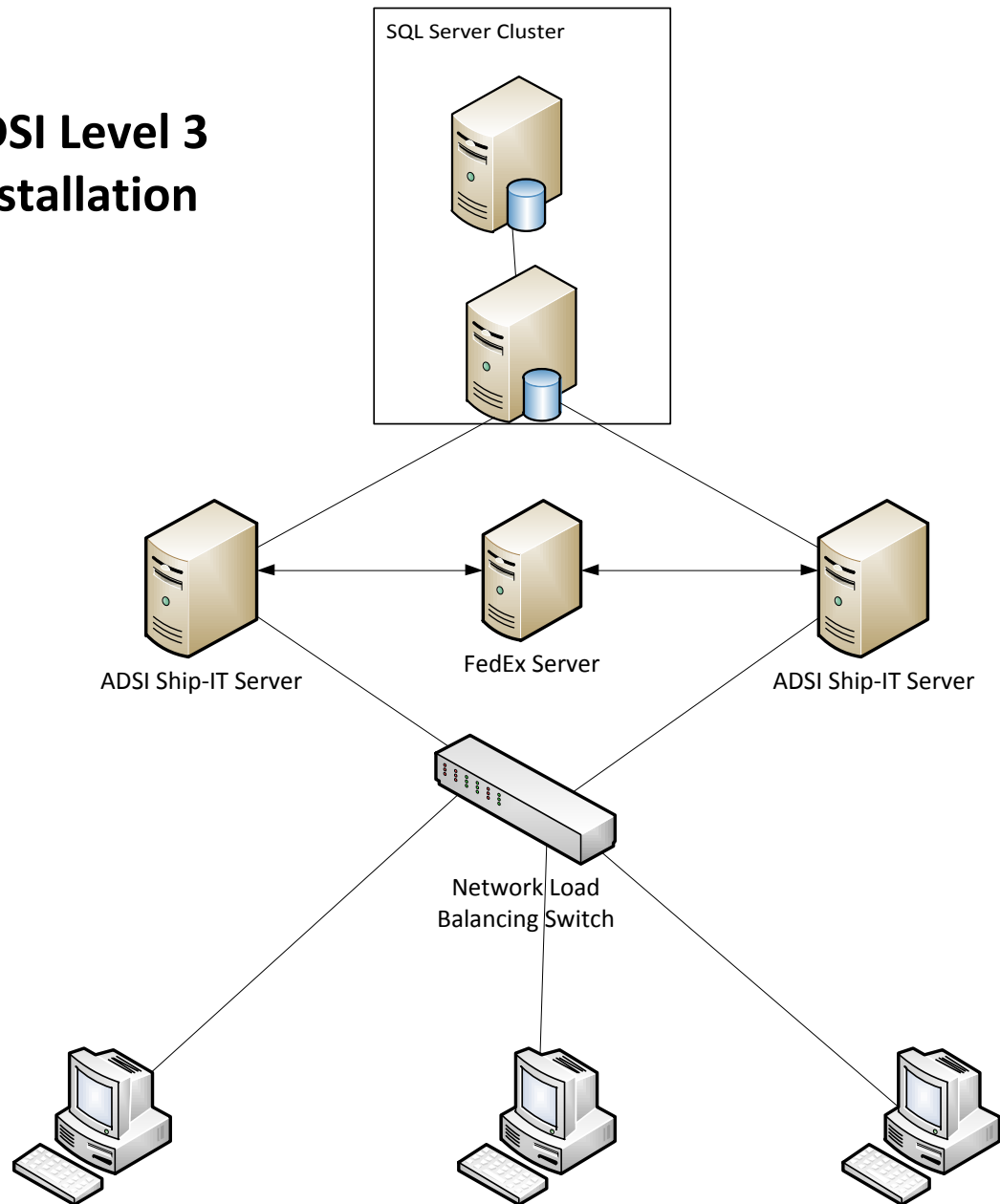
ADSI Level 2 Installation



Level 3 Installation

Finally, a Level 3 Installation will separate the components and also include a Load Balancer in between to maximize performance and efficiency.

ADSI Level 3 Installation



Among other differences with the lower levels of installations, the SQL Server is in a separate clustered environment. This provides for High Availability and Disaster Recovery by having a hot swappable SQL Server. This is largely beneficial due to the ADSI Shipping System being database driven. If a Shipping

Server were to go down, not only is the other one available to take the full load of transactions, but setting up the other server will not take long, since all the configurations are in the database.

Performance

Below are some benchmark results running test transactions with either shipping or rating requests. Rating transactions are faster than shipping transactions because they don't write information to a database.

	Transactions Per Hour			
Level 0 Installation	1 User	5 Users	10 Users	20 Users
Shipping Transactions	95,411	69,898	36,594	17,611
Rating Transactions	152,471	108,756	53,719	26,654
Level 3 Installation				
Shipping Transactions	270,544	137,804	86,558	45,349
Rating Transactions	531,594	291,938	183,496	116,831

These benchmark tests did not print labels, for several reasons, not the least of which was the cost printing millions of labels. Many of our customers choose to batch process their shipping transactions several hours before actually printing labels and sending packages out the door, so our testing is ideally suited to depict this type of scenario.

Printing labels introduces several variables that are dependent on your environment, such as network latency and printer speed. For the same reason, we didn't process packages through an ERP or WMS. The processing speed of a shipping transaction is much more likely to be affected by the speed of your ERP and printer than the speed of the ADSI Shipping Server.

Our tests focused on what happens once the ADSI Shipping Server receives a transaction request. All other factors are based on your environment, and those factors will not change regardless of which shipping system you use.

System Prerequisites

Kernel Requirements (Minimal requirements for ADSI/ConnectShip Server)

- 3.4GHz Intel Pentium D Processor, 4 GB RAM, One (1) 120 GB hard drive, CD drive, mouse, keyboard, display, 10/100/1000 Ethernet.
- Note: High volume environments (1000 transactions per hour) require dedicated SQL Server instance. At any volume performance may be improved with a separate SQL Server.

- Windows Server 2003 or 2008 Operating System.
 - *The latest service packs & security fixes are recommended for the operating system*
 - *Windows user='adsi' (any password) with local administrative privileges on the server*
- NTFS file system
- Microsoft 3.5 SP1 of the .NET Framework
 - *The recommended method for installing the .NET Framework is via Windows Update*
- Microsoft Distributed Transaction Coordinator (MSDTC) Service
- VB Scripting Engine 3.1+
- Workstations and Server user needs to be able to access the registry key.
- Workstations need to be able to access a shared folder on the Server.
- Sun Java JRE 1.5 - installed by default with FedEx FSMS software.
- Microsoft Data Access Components (MDAC) 2.6 RTM (2.6.6526) or later (MS Server 2003 installs 2.8 by default)
- Internet Connectivity
 - *Licensing, & carrier data uploading, requires Internet access. Details follow.*
- Database Requirements
 - *Microsoft SQL Server 2000 or greater*
 - *If SQL 2000 is used to store Server Transactions, Service Pack 3 or later is required.*
 - *add a SQL Server 2005 user as 'adsi'.*

Requirements for Installing Configuration Pages

- Minimum Microsoft Internet Information Server 5.0 with ASP support enabled
 - *IIS 6.0 –MS 2003 Server installs version 6.0 by default*
- VB Scripting Engine 3.1+

Requirements for Using Configuration Pages

- Microsoft Internet Explorer 5.5 SP2+ or Netscape Navigator 4.0+
 - *IIS 6.0 - MS 2003 Server installs version 6.0 by default*
 - *The configuration pages do not function correctly when Active Desktop is used.*

HTTP Connectivity to ConnectShip

Certain capabilities and features of your Prologistics installation are controlled by your license. To activate these features ADSI requires access to:

Site: prologistics.connectship.com

Port: Standard HTTP Port

ADSI Client Server Communication

Connectivity to ADSI Shipping Server from workstations

The workstations communicate with the ADSI Shipping Server using TCP/IP sockets.

Port: 3000

Connectivity to ADSI Shipping Server from configuration application

The configuration application is installed on the same server as the ADSI Shipping Server. It communicates with the server using a TCP/IP socket.

Port: 3001

Additional Requirements

- Local Administrator username/password with access to all of the manifest printers
- At least 30 GB of free space assuming you are not using the server for the MS SQL server, 80GB if it is being used as the SQL server.

Carrier Prerequisites

FedEx

HTTPS connectivity to FedEx.

The FedEx Ship Manager Server Software version 7.n, will establish a Secure Socket Layer (SSL) connection to FedEx during end-of-day file uploads and rate and route file downloads. This function requires the ability to open a socket connection via port 443 from the ADSI server. If we are accessing the Internet from behind a firewall or a proxy server, we will need to enter the proxy server name, user name, and password (if applicable) in the Shipper Account configuration window.

Note: FSMS will only install on drive C: Please reserve at least 10GB of space on C:\ drive. FedEx software is unable to be configured using MS Remote Desktop Connection tool and therefore will require the /Console or /Admin switch to run.

Site: fxrs.ts.dmz.fedex.com
IP Address: 192.81.x.x
Port: Standard SSL Port 443

Note: for expeditious resolution of FedEx issues FSMS support may be made use of at the discretion of ADSI Support. FedEx Support requires access to <http://helpme.fedex.com/> & <http://www.fedex.com/us/automation/fsm/remotesupport/>. The access tool requires download of a small self-installing plug-in that allows the FedEx Support person to control the machine. Proprietary compression technology and 128-bit AES encryption technology ensure that data exchange is completely secure.

DHL Express

connectivity to DHL

Transmitted end of day ESM files are uploaded to DHL through DHL CycloneActivator software. ESM Files being sent to a CycloneActivator based unit will be sent to that unit's secure web mailbox. CycloneActivator will poll this mailbox for new files every five minutes. Firewalls and proxy servers which exclude sites by default will need to include the DHL B2B Gateway server to allow for CycloneActivator to communicate with DHL. This server is named:

<http://b2bgwy.dhl.com:80/>. Traffic to this server is via port 80 and uses S/MIME over the HTTP protocol. There are additional addresses which must be allowed when using the automated set up tool. These addresses are:

- <https://b2bgwyadm.dhl.com:443/>
- <https://webservices.cyclonecommerce.com:443/>
- <http://www.cyclonecommerce.com:80/>

You may need to configure the HTTP proxy settings via the Prologistics Management Console. Please contact your Network Administrator for appropriate settings. See the [CycloneActivator documentation](#) for more information regarding CycloneActivator connectivity.

UPS

HTTPS connectivity to UPS.

The UPS Server Component will establish a SSL connection to UPS during end-of-day PLD transmission. This function requires the ability to open a socket connection via port 443 from the ADSI server. If we are accessing the Internet from behind a firewall or a proxy server, we will need to enter the proxy server name, user name, and password (if applicable) in our Shipper Account configuration window. Rate and route files are loaded initially from the installation CD. These rates are the published rates. If negotiated rates are required by the customer they will be provided by the carrier and loaded from diskette.

Site: <https://www.pld.ups.com/hapld/tos/kdwhapltos>

Site: <https://www.pld-certify.ups.com/hapld/tos/kdwhapltos> (for initial configuration)

Port: Standard SSL Port 443

UPSLink connectivity to UPS.

The UPSLinkHTTP software will establish a SSL connection (port 443) to UPS during end-of-day PLD transmission. This function requires the ability to open a socket connection via port 443 from the ConnectShip server. If you are accessing the Internet from behind a firewall or a proxy server, you may need to configure the HTTP proxy settings via the Prologistics management Console. Please contact your Network Administrator for appropriate settings.

- a) This is a secure http connection. So https must be enabled.
- b) Make certain GETHOSTIP has inbound and outbound access through the firewall
- c) UPSLNKH.exe needs to be allowed through the firewall
- d) The executable for the transmission program itself needs to have access through the firewall
- e) If this is a corporate firewall or proxy it needs access to the whole 153.52 network. The IP will be 153.52.x.x and this is a Class B network
- f) Passwords need to be clear text
- g) SSL 2.0 and 3.0 should be enabled
- h) Proxy address needs to be alpha characters not numeric

Endicia

Endicia Gateway required connectivity to:

<http://labelserver.endicia.com/> and <https://www.endicia.com> : 80 and 443